Bandsawn box

Michael Forster
is inspired to try an unusual box making technique

Some years ago now, I ran across an offcut of 75 x 75mm oak in a timber yard, and thought it would be good for making a bandsawn box – something I've never done and wanted to try. The block sat in a corner for a long time, until I discovered Lois Keener Ventura's inspirational book, *Building Beautiful Boxes with your Band Saw*. It was love at first sight.

I decided to apply Ventura's principles, but to have a go at designing the box myself to suit the timber to hand – so apart from the specific design and a couple of modifications, the credit for this really goes to Lois Keener Ventura. I hope that this box might inspire others to buy her book and have a go at some of the stunning designs she offers.

PHOTOGRAPHS BY MICHAEL FORSTER

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THE KIT

• Obviously, you need a bandsaw capable of cutting quite sizeable sections – my 75 x 75mm is about 25% smaller than Ventura's smallest design – and fitted with a fine blade. The nearest I could find to her recommended 3/8in 14 tpi blade was 1/8in 20 tpi, and I wondered how it would cope with the hard oak, but I needn't have worried. However, to be safe, I cut out the outside shape first, using the already-fitted skip-tooth blade and keeping shy of the line – I could sand out the saw marks and still be faithful to the shape. Ventura cuts the external shape later, which I can see is a good idea, but I just wanted to take advantage of the currently fitted blade.

• Power sanding is unavoidable in this kind of work, and I used an oscillating bobbin sander and a couple of sanding drums in a cordless drill. Ventura also recommends a disc/belt sander, but I got away without one. Were I making these boxes regularly, then that's an investment I'd seriously consider.

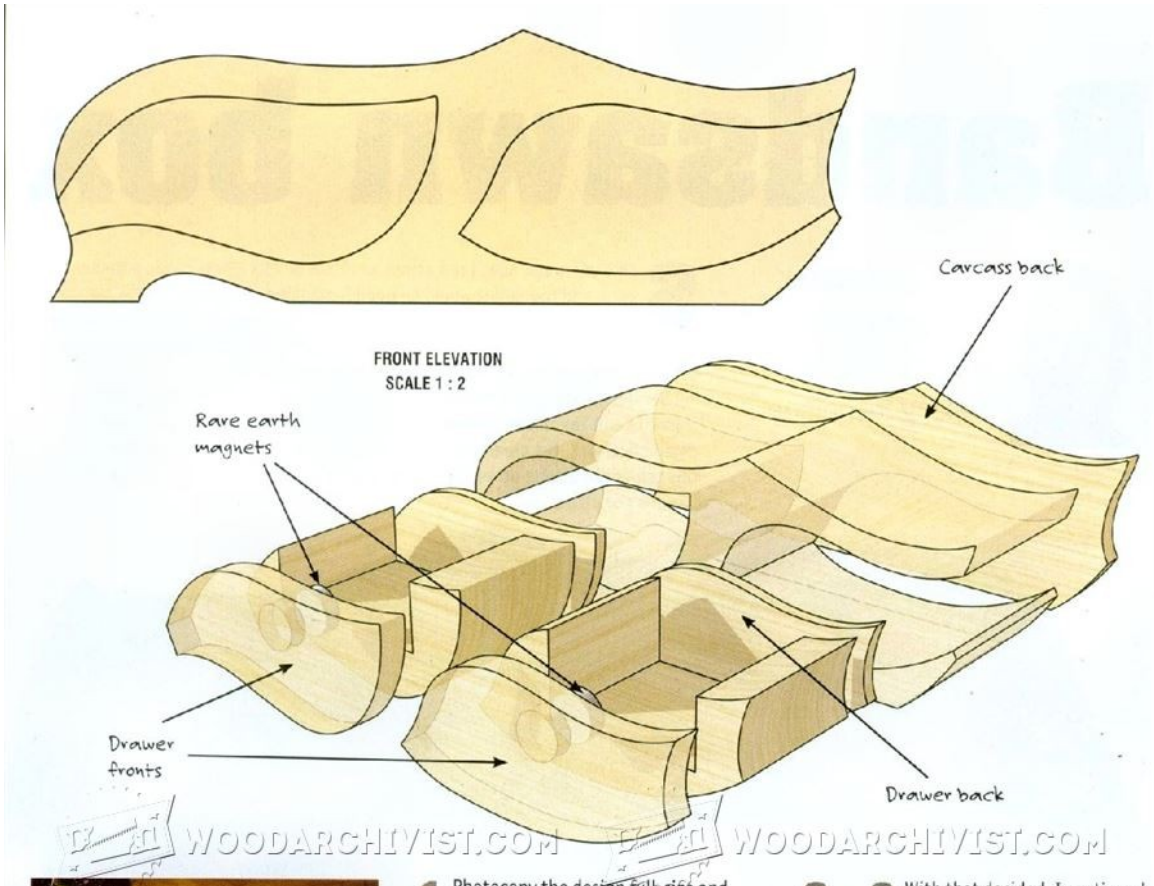
• Absolutely essential is good extraction and air-filtering – the dust from many hardwoods is toxic, and even if it's not, it still won't be very good for you. I used extraction on the machines and clamped the hose near the vice when using the hand-held drums. In addition, I wore my Airshield respirator and kept the ambient air filter running. Finally, with all that going, I protected my hearing with good ear defenders.

So that's the kit – now let's start making.

"I followed her advice, simply letting the pencil wander around and watching for what might evolve"

Getting started

Ventura begins by laminating 25mm boards to make up the necessary thickness. However, since I'd bought this block for the purpose, I skipped that stage. I began by simply drawing round the block onto a piece of paper, and then started doodling with a pencil and rubber. Initially it was a bit discouraging, but I followed her advice, simply letting the pencil wander around and watching for what might evolve. Suddenly, it did, and it was time to erase the mess to allow the shape to emerge. My first design left a lot of short grain between the drawers, but was easily adapted, and then I was ready to go.



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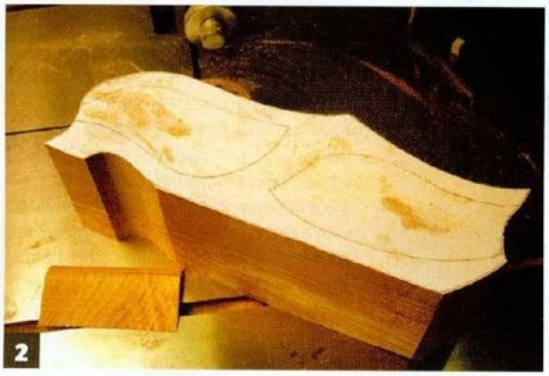
Stick the design to the block using spray mount adhesive

1 Photocopy the design full-size and stick it onto the block with spray mount adhesive. At this point, don't rush in as I did, and remember you need a solid back behind the drawers – so cut that off first. I remembered this after I'd started cutting the drawer outlines. There was now nothing for it – I'd have to add a back panel later. Since I didn't have any more oak, I considered a contrast – black walnut or padouk – but decided to be more subtle: an ash back, chamfered or rounded away so that it wouldn't be too obvious.

2-3 With that decided, I continued to cut out the box and drawer shapes using the ultra-fine blade – it was important to minimise the sanding in this area to keep the fit of the drawers as good as it could be. Take it steadily with this – it's a big ask for a narrow, fine-toothed blade, and you don't want it bowing as it rounds the curves.

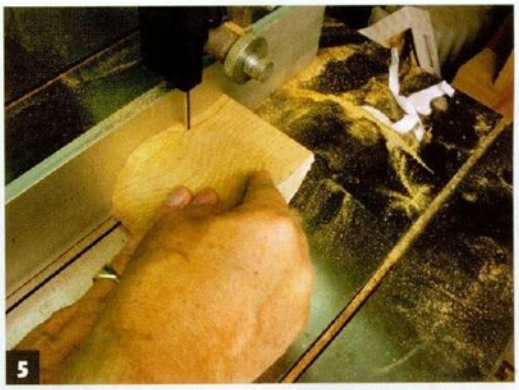
Each drawer in this design needs two cuts, backing the blade out of the timber in between – make sure that you stop the blade while you do that.



You might prefer to bandsaw the external shape before changing to the fine blade as it's feasible to cut shy of the line, then sand

Don't bandsaw out the drawer blocks until you've ripped off and preserved the solid back... unlike my mistake

Sanding the box carcass with a bobbin sander



Rip the fronts and backs off the drawers – just keep a firm but not over-tense grip and it's quite simple

4 I decided to sand next, while the drawers were still each in one piece, to give me more to take hold of. I should have started with the front, using a random-orbit sander to remove all traces of the pattern and glue. Doing this after the rounding created a corner so that I had to go back to the drums to remove it. Well, we all live and learn! The oscillating bobbin sander is a great tool for smoothing the sawn curves – use the largest drum you can for each part to minimise any rippling. Since there aren't any fitting issues, the outside of the carcass can be sanded quite enthusiastically, working through the grades. The inside is a little different – keep on testing the drawer blocks in their spaces to ensure that the shape isn't being distorted. I compromised, settling for a slightly less good finish on the surfaces that won't be seen much, rather than unnecessarily large gaps around the drawers, which would be highly visible.

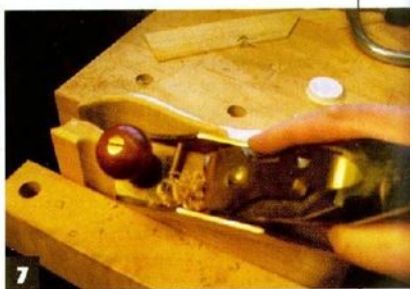
A drum sander in a hand-held cordless is great for sculpting the internal corners of the carcass. Carroll drums are good and you can cut the abrasive from the sheet, saving money

5 With the basic sanding done, rip the backs (6mm) and the fronts (12mm) from the drawers. Place the carcass on its back on the bench and drop the drawer backs and fronts into their openings to act as packers. The main drawer blocks will then be almost flush with the surface when they're inserted, and you can square off from the bottom of the box to mark the cut-outs. The rounded corners of the insides can be just roughly sawn by eye and then cleaned up to a nice curve on the bobbin sander. At this point, you could glue back on the back panel.

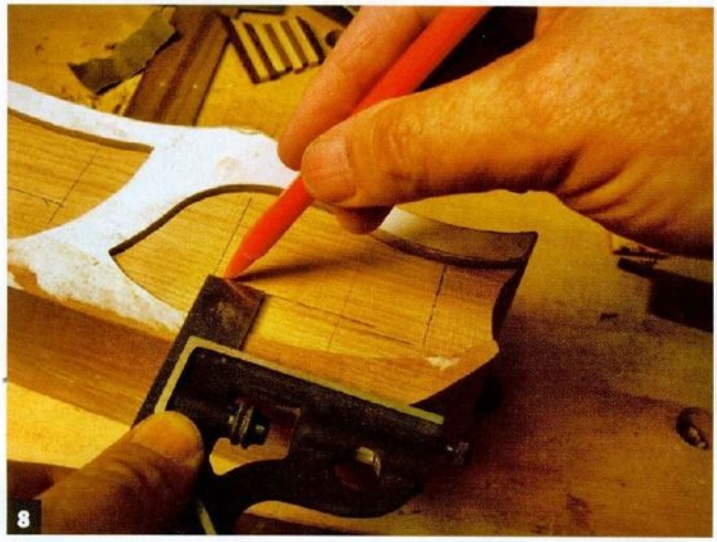
Sculpting

6 – 7 Sculpting is an essential part of the job – and at this stage I wished I'd chosen something a little more tender than oak. Here is where the box loses its stark flatness and takes on an organic look.

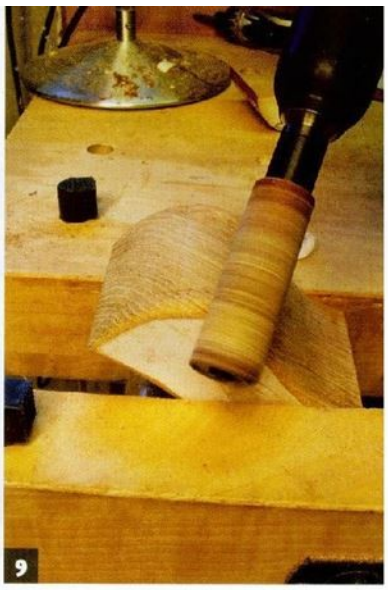
An important consideration in my design had been to eliminate any fiddly carving work, so all the rounding can be done with the drums, making it a little easier for a first project. Begin with quite a coarse grit to deal with the sharp edge, and then move on to finer ones as it takes shape. It's a good idea to oscillate the drums in the hand-held stage to spread the wear. Check the rounded surface with your fingers since they are much better than eyes for detecting irregularity.



The straight bottom edge can be rounded off with a hand-plane and then followed by hand sanding



Mark the square cut-outs for the drawers



After fitting the magnets and reassembling, the front edges of the drawers are rounded in similar fashion to the carcass

8 Now it's time to assemble the drawers – and here's where I decided to do my own thing again. Rather than drawer pulls, I wanted to use inset magnets to open the drawers, giving the piece a little mystery as well as clean lines. Test on scrap first to ensure that the magnet will pull through the planned thickness of timber.

I found success using two 19mm rare earth magnets in each drawer, set 5mm back from the face. Set up the drill press with a 20mm Forstner bit to stop 5mm short of break-through, and make the housing on the inside of the drawer front. Epoxy the first magnet in place, and the drawers can be reassembled, glued and cramped up. It was at this point that I realised I should have protected the steel magnets with a wrapping of cling film – the acid in oak attacks steel.

The internal magnets allow any ferrous metal object to be pressed into service to open the drawers

9–10 Once the glue is dry, round off the edges of the drawers in like manner to the carcass, and test them in place. Despite my careful testing earlier, I found that a single magnet wasn't strong enough to overcome the additional friction of the drawers in the carcass, but fortunately the holes were deep enough to insert a second, and that did the job.

11 Finish with plenty of hand sanding, and then apply a protective finish. This is my wife's department. Oil could be used, but we like the effect of General Finishes' acrylic varnishes. As advised, she applied one gloss coat followed by two satin, and as you can see, the timber has retained its natural colour.

With all that done, a piece of self-adhesive flock fabric on the bottom will add a more professional touch. ■

With three coats of finish applied, the oak still looks surprisingly natural, and that's nice. Self-adhesive flock fabric on the base adds a touch of refinement

Supplies and information

- 19mm rare earth magnets: Axminster Power Tools **www.axminster.co.uk**
- Water-based polyacrylic topcoat: General Finishes – various UK suppliers (e.g. Classic Hand Tools) are listed on their website **www.generalfinishes.co.uk**
- Self-adhesive velour fabric: Craft Supplies **www.craft-supplies.co.uk**
- Further reading: **www.woodworkersinstitute.com** **www.woodworkersbookshop.com/product/sculpted-band-saw-boxes**